ABSTRACT OF THE INVENTION

DNA encoding a therapeutically suitable glutaminase has been molecularly cloned. This allows one to obtain a polypeptide which is a therapeutically suitable glutaminase free of contaminating endotoxin. It has been found that this polypeptide is a potent anti-viral agent and when coupled to an anti-tumor monoclonal antibody is a potent anti-cancer agent. The glutaminase of the present invention is particularly useful for treating lung, breast and colon cancer cells and in the treatment of HIV-infected cells.